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DEVELOPMENT OF AGRICULTURE IN LOWER GEORGIA FROM 1850 TO 1880.

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In the preceding number of the Quarterly the writer sketched the development of agriculture from 1850 to 1880 in that part of Georgia lying north of the fall line (about two-fifths of the state), by means of census statistics. The present article covers the coastal plain or lower three-fifths of the state, for the same period. The explanation of the methods used and the general principles illustrated will not be repeated any more than necessary, for it is presumed that every reader of this will also have access to the preceding instalment. The soil and vegetation of each region will be described briefly, and the principal emphasis will be laid on the economic and social differences induced by (or correlated with) differences of soil.

Besides the literature dealing with the whole state, cited in the previous paper, there are a few additional works relating particularly to lower Georgia that deserve mention. Sir Charles Lyell, a noted English geologist, entered the state at Augusta about the end of 1841, and went by steamer about seventy miles down the Savannah river, and then by land to Millhaven, Jacksonborough, and Savannah. Four years later he landed at Savannah, and went by steamer to

Darien and several places in that vicinity, and a little later traveled over the Central Railroad, mostly by hand-car, to Macon and Milledgeville, and then by stage to Columbus. He was an acute observer, not only of geological phenomena but of social conditions, and his views on slavery are especially valuable on account of their impartiality. His observations are set forth very interestingly in two works of two small volumes each, "Travels in North America," published in 1845, and "Second visit to the United States," 1849.

The "Journal of a residence on a Georgia plantation in 1838-9," by "Fanny Kemble" (Mrs. Pierce Butler) published in New York in 1863, is often cited, but is said to be decidedly prejudiced. The plantation described was near Darien. Her daughter, Frances Butler Leigh, wrote a more friendly book, "Ten Years on a Georgia Plantation Since the War," published in London in 1883. A much more optimistic picture of slavery days in Liberty County is R. Q. Mallard's "Plantation days before Emancipation," published in Richmond in 1892. The Autobiography of Joseph LeConte, published in 1903, gives an interesting account of his boyhood days in Liberty County before the war, by one who was perhaps the greatest scientist Georgia ever produced.[1]

Lower Georgia is more diversified than upper Georgia in soil, but not so much in topography, no point in that section exceeding 700 feet above sea-level, as far as known. Statistics are given below for nine sub-divisions, and there are two smaller ones shown on the map, which do not extend far enough into Georgia to be studied in that way. For each region the leading soil texture classes will be given, as determined from recent government soil surveys of many counties, and a few of the commonest trees, as determined by quantitative studies in every county.

1 A descriptive work covering the whole state which I neglected to cite in the previous article is a "Handbook of the State of Georgia" by Dr. Thomas P. Janes, Commissioner of Agriculture, published in 1876. Most of the chemical data in it were contributed by Dr. H. C. White, who taught me chemistry at the University of Georgia twenty years later, and is still there, and the geological and botanical chapters by Dr. George Little, then state geologist, who now lives in Tuscaloosa, Ala. (the city of his birth) a few blocks from me, and can remember Sir Charles Lyell's visit to Tuscaloosa in 1846.

Map showing geographical or agricultural divisions of Georgia. Only those south of the fall line are discussed in this article. The small areas without names are two portions of the fall-line sand-hills near Macon, the Tallahassee red hills south of Thomasville, and the peninsular lime-sink region of Florida, south of Valdosta. The railroads and county boundaries are those of 1885.

The uppermost division is the *fall-line sand-hills,* a narrow and more or less interrupted belt bordering the fall line from central North Carolina to western Georgia. As the name implies, the country is elevated and sandy, and the soil rather poor; but like many other poor regions the world over, it is salubrious and well supplied with good water. Geologists are not yet agreed as to whether the sand is a product from Cretaceous strata, or a comparatively recent sedimentary deposit, but that makes no particular difference to the student of vegetation or population. The leading soil texture classes, in order of area, are sand, coarse sand, sandy loam, coarse sandy loam, swamp and fine sand. The natural forest growth is mostly long-leaf pine and forked-leaf black-jack oak (sometimes called turkey oak) on the uplands, and black gum, bay, poplar, red maple, etc., are common in swamps.

The region is sparsely settled, and it differs from all the surrounding regions in having more whites than negroes. It is too narrow to cover the whole of any county, but statistics for Glascock and Taylor counties (both established between 1850 and 1860) represent it fairly well, though it must be borne in mind that both, especially the latter, contain parts of more fertile regions, and if these could be excluded the contrasts would be still greater.

It was just at the inland edge of this region that David Dickson and Farish Furman made notable successes in farming about half a century ago, the former, in Hancock County, mainly by efficient utilization of labor, and the latter (a son-in-law of Joseph Le Conte) in Baldwin County, by the intelligent use of fertilizers.

The *blue marl region* is small in Georgia but larger in Alabama. Its strata are of Cretaceous age, and mostly marly, but covered in most places, like the greater part of our coastal plain, with later non-calcareous clays and sands. It is moderately hilly, and some of the valleys are wider than the ridges, reminding one of the Appalachian Valley (Northwest Georgia) on a small scale. The railroads are mostly

in the valleys, and where they cut through the ridges they often expose the marly strata full of characteristic fossils. Some of the creeks flow through small gorges with precipitous sides.

The prevailing soil texture classes are sandy loam, clay, fine sandy loam, sand, and very fine sandy loam. There is very little swamp. The commonest trees are short-leaf (loblolly) pine, long-leaf pine, short-leaf (rosemary) pine, and sweet gum. On account of the small area of this region in Georgia, the statistics for it are not very satisfactory. It covers most of Chattahoochee County and less than half of Quitman and Stewart, but probably includes most of the farm land in the last two.

The *red hills* of the coastal plain extend from eastern South Carolina to northern Mississippi, and perhaps a little farther in both directions, in a belt about thirty miles wide. The underlying strata are Eocene limestone, marl, chert, shale etc., but they do not usually show at the surface enough to influence the soil much, the prevailing surface material being a reddish loam, varying from clay to nearly pure sand in places. The topography is rolling to moderately hilly, with broad uplands and narrower more or less swampy valleys. At the boundary between this and the blue marl region, particularly near Brooklyn and Lumpkin, there is an inland-facing escarpment about 600 feet above sea level, from which one can get extensive views to the northwestward.

There is a narrow belt of limestone and strongly calcareous soils extending from about Sandersville to Perry, which might rank as a distinct region if it was wide enough; and the influence of limestone is seen in a few other places, particularly in northern Randolph County, in the occurrence of a few caves and shallow ponds. The principal soil texture classes, according to existing soil surveys (which hardly touch any of the distinctly calcareous areas) are sandy loam, fine sandy loam, sand, loamy sand, clay loam, and "meadow" (the last a term used by the Bureau of Soils con-

trary to ordinary usage, to cover a great variety of soils subject to occasional inundation). Three kinds of pine and several oaks are common on uplands, sweet gum in various situations, and bay, poplar, black gum and cypress in swamps.

The *red lime lands* (heretofore combined with the sandy lime-sink region) are underlaid by Oligocene limestone, which influences the soil much more than most of the Eocene strata in the red hills do, as manifested by rock fragments in the soil and by numerous ponds and lime-sinks. The topography is neither flat nor hilly, but may be called rolling. The soils are commonly reddish in color, except where sand prevails. (There seems to be very little red soil in Lee County, but that county is included on account of the abundance of limestone and the predominance of negroes.) The prevailing texture classes in the parts of Terrell, Dougherty and Early counties included in this region (there being no soil surveys yet for Lee and Calhoun) are sandy loam (about half the total), clay loam (about one-fifth), swamp, loamy sand, gravelly sand loam, and gravelly clay loam. (There is perhaps no other equal area in the coastal plain east of the Mississippi River with so much clay loam.)

This is one of the few places east of the Mississippi River where the live oak grows wild over 100 miles from the coast; and although we have not enough chemical data yet, this may be an indication that the soils are rich in phosphorus, for in Florida the live oak seems to be partial to phosphatic soils. The vegetation in other respects is somewhat intermediate between that of the two adjoining regions.

Before the introduction of artesian wells (the first successful one in Georgia was drilled by Col. John P. Fort in the western part of Dougherty County in 1881) good water was scarce in this region (as in many other fertile regions); and before the discovery of the relation of mosquitoes to malaria, in 1900, it was regarded as very unhealthy for white people. Even yet negroes are decidedly in the

majority in the rural districts. The number of white persons in Dougherty County outside of Albany decreased from 1151 (17.3%) in 1860 to 501 (6.1%) in 1890, then increased to 1282 (15.1%) in 1920; and of course some if not most of them were in the sandy eastern part of the county.

The *lime-sink region* proper is chiefly confined to Southwest Georgia, West Florida, and southeastern Alabama, but it may be represented also in South Carolina and eastern Mississippi. It is underlaid by about the same geological formation as the preceding, but that is nearly everywhere covered by several feet of clay and sand, so that the vegetation does not differ much from that of the next region, which is distinctly non-calcareous. The topography is undulating to flattish, with many shallow ponds, some open and some full of trees, and surprisingly few small streams, on account of the prevalence of subterranean drainage. (One can go from Bainbridge twenty miles northward or northwestward without seeing any running water except the Flint River and Spring Creek.) In many places it is necessary to sink a well fifty feet or more to get good water, and the negroes may either carry what little water they need from some white man's house, or dig a shallow well close to the edge of some pond. There are several large limestone springs (blue springs), the best known one being a few miles south of Albany.

The prevailing soils are sandy loam (about three-fourths of the total), sand, "meadow," swamp, loamy sand, clay loam (about 2%), fine sandy loam, gravelly sandy loam and coarse sand. The original vegetation was mostly longleaf pine and wire grass, with slash pine, pond cypress, black gum and May haw in ponds, and various other deciduous trees along rivers and creeks.

The *rolling wire grass country* has no counterpart in South Carolina, but covers about 10,000 square miles in Georgia, and extends, with some interruptions, across West

Florida, southwestern Alabama, Mississippi and Louisiana. The strata within a few hundred feet of the surface are usually all clay and sand, and in a few places a clayey sandstone of about the color of pine bark, known as Altamaha Grit, crops out on hillsides. The boundary between this and the lime-sink region in most places is a distinct inland-facing escarpment, which in Decatur County rises about 150 feet in three miles.

The topography varies from flat to moderately hilly. The flat areas are usually on uplands remote from streams, and dotted with shallow irregular cypress ponds. In the hilly portions the valleys may be as much as fifty feet deep. Streams of all sizes abound, and good water is easily reached almost anywhere by shallow wells and suction pumps, compensating to some extent for the comparative infertility of the soil. There are deep beds of sand along the left sides of most of the creeks and rivers, a feature more extensively developed in this region than anywhere else in the eastern United States. The prevailing soil types are sandy loam (over half), sand, fine sandy loam, swamp, "meadow," coarse sandy loam, and loamy sand. A good deal of the upland is strewn with ferruginous nodules usually a fraction of an inch in diameter, making what is known as "pimply land," and regarded as a little better than the average.

In this region, as in all southeast of it, late summer is the wettest season, and the warm rains must have leached out much of the fertility that may have originally been in the soil. Such a climate is also unfavorable for the picking of ordinary upland cotton, but does not interfere so much with sea-island cotton, which ripens later, and was the preferred variety before the boll weevil came.

The country was originally covered with a magnificent forest of long-leaf pine carpeted with wire-grass, with small oaks on sand hills, cypress and slash pine in ponds, and bay, black gum and other hardwoods in swamps. Like many other regions with soil below the average in fertility, it has

always been practically free from malaria, and whites are nearly everywhere in the majority. In 1880, the latest year for we have such data by counties, there were more natives of North Carolina than of South Carolina in this region, a fact probably correlated with differences in the average fertility of the soil in those two states.

In ante-bellum days cultivated land must have been chiefly confined to river-bottoms and a few spots on the uplands where the sand is thin, and there was probably a good deal of somewhat nomadic farming, cultivating a small area for a few years until the soil was exhausted, and then clearing another patch and repeating the process. Lumbering and turpentining and cattle raising must have contributed more to the support of the population than tilling of the soil, as we can easily infer from some of the statistics presented presented below. But in spite of the unpromising environment some of the farmers were very thrifty, and White in his Statistics of Georgia, 1849, speaks in terms of admiration of the industrious citizens of Bulloch County.

The *hammock belt* includes parts of a few of the southern tier of counties in Georgia, but is more extensive in Florida. Its rocks seem to be mostly impure limestone, but they are not exposed in many places. The topography and soil vary greatly in short distances, from red loamy hills something like those in the red hill belt already described to flat sandy pine woods scarcely distinguishable from the flat pine lands described farther on.

The soils are evidently more fertile on the average than those in the wire-grass country, and the prevailing texture classes are fine sandy loam (over half), fine sand, sandy loam, sand, "meadow," swamp, and loamy sand. The commonest trees are long-leaf pine, short-leaf (loblolly) pine, and bay. The vegetation includes a good deal of hammock, characterized by magnolia, beech, spruce pine, sweet gum, evergreen oaks, dogwood etc.

The *Tallahassee red hills* is a small region best devel-

oped around Tallahassee, Fla., but extending northeastward to near Boston, Ga. One studying it in Georgia alone might consider it merely an extreme phase of the hammock belt, but it is more distinct in Florida. It is especially characterized by phosphatic rock (not pure enough to be mined with profit), and reddish loamy soils, with numerous lakes and ponds and few streams. The live oak and sweet gum (which are supposed to like phosphorus) are common trees, and the short-leaf (rosemary) pine still more so. The inhabitants are mostly negroes. There is not enough of this in Georgia to be treated statistically.

In the southern part of Lowndes and Brooks Counties is the north end of another lime-sink region, which extends far down into Florida, and includes the most important phosphate deposits in that state. The small portion of it in Georgia does not differ much from the sandy lime-sink region already described.

On the southeast the rolling wire-grass country passes sometimes gradually and sometimes abruptly into the *flat pine lands,* similar in soil and vegetation, but differing in topography, being in most places less than 100 feet above sea level and devoid of hills. The most conspicuous topographic features are two low sandy ridges, or terraces, running parallel to the coast, one about 40 miles inland and one about 25. The inner or higher one, known in Florida as Trail Ridge, makes a sort of dam along the east side of Okefinokee Swamp, a scenic wonderland covering about 700 square miles. The other causes the Satilla and St. Mary's rivers to flow parallel to it each for about 30 miles before resuming their direct courses to the sea.

The area is so flat that it is "poorly drained," except near rivers and creeks that have cut their channels down a little below the general level, and shallow swamps and ponds abound, and water is of course easy to get. The region seems to be about as healthful as the rolling wire-grass country, though. The prevailing soils are fine sand, fine

sandy loam, sand, swamp, and "meadow." The vegetation is much like that in the rolling country, except for having more swamp. The commonest trees are long-leaf pine, slash pine, pond cypress, black gum, black pine and bay.

The *coast strip* averages about twenty miles wide in Georgia, and includes a low, flat, marly belt on the mainland, extensive salt marshes, and the sea-islands, which are composed mostly of wind-blown sand, marsh muck, and oyster shells. The soil is moderately fertile, though in many places too low and damp to be cultivated profitably.

The principal soil types are marsh (about one-fourth), fine sand, clay, swamp, fine sandy loam, very fine sand, very fine sandy loam, coarse sandy loam, and clay loam. The commonest trees seem to be short leaf (loblolly) pine, slash pine, sweet gum, black gum, red maple, long-leaf pine, black pine, cabbage palmetto, and live oak; though of course if the islands alone were considered the sequence would be quite different.

On account of its accessibility, mild climate, and moderately fertile soil, this is the oldest agricultural region in the State. Indigo was an important crop in the 18th century, and rice held the lead considerably later. There were orange groves near Savannah before the Civil War. Sea-island cotton has been raised extensively, but not as much as in the corresponding portion of South Carolina. Only a comparatively small part of the area is cultivable, though, and before the days of artesian wells it was hard to get good water, so that few white people lived outside the cities.

It is difficult to get accurate statistics of this region, for two reasons. First, all of the six coast counties include considerable areas of the flat pine lands, which are very thinly settled. This is especially true of Liberty County, which although one of the oldest, with many traditions pertaining to its coastward extremity, extends so far back into the piney woods that county totals for it mean very little. Another difficulty is the concentration of most of the population

in Savannah and other seaports, whose growth reflects the prosperity of a large tributary territory, practically all of South Georgia, and is not dependent on their own environment. For this reason the figures for density of population, inhabitants per farm, etc., in this strip are not worth much for comparison with the other regions described. But of course this condition was not so marked in the period covered by this article as it is now when the seaport cities are much larger.

Bearing these brief descriptions of the several regions in mind, we can appreciate the statistical differences shown in the following tables. On account of the lack of correspondence between natural and political boundaries, if the ratios were carried out to as many decimals as even a small slide-rule allows, it would give them a false appearance of greater precision than can be claimed for them; so that decimals are usually omitted in the case of numbers with two or more digits, which is practically necessary anyway if we are to get nine columns of figures on one page. And in some cases the figures obtained by calculation have been deliberately distorted a little to bring them nearer the truth. For example, all the counties crossed by the hammock belt also contain some rolling wire-grass country, so that the ratios for those counties are somewhere between the ratios for the hammock belt and those for the wire-grass country, and it is permissible to shift them at least to the nearest whole number in a direction away from the wire-grass ratios.

As in the preceding article, the highest number in each line is printed in heavy type and the lowest in italics, unless two or more are so nearly the same that it is difficult to decide between them. This shows at a glance the extremes of variation in any particular region within the area treated, and makes it much easier to determine in what respect any particular region leads or falls behind. There is hardly room for the state averages in the tables, but they can be found in the previous article.

The four tables together contain about a thousand ratios, and may seem at first thought to make pretty dry reading. But it should be borne in mind that every number expresses some fundamental fact and to put all the same facts in sentences would involve tiresome repetition of words and require several times as many pages.

In 1850, the earliest period for which the census gives the number and size of farms, the counties traversed by the sand-hills, blue marl region, and hammock belt were so much wider than those regions that county statistics for them would be quite misleading; so they are omitted from the first table. The red lime lands perhaps should be omitted too, for it covered only a small part of Baker and Lee Counties at that period; but as the farming in those counties must have been chiefly confined to the red lands, the various ratios per farm may be accurate enough, and we can simply omit the density of population and percentage of improved land.

The red hill belt at that time was represented by Burke, Houston, Jefferson, Macon, Randolph, Twiggs, Washington, and Wilkinson Counties, the sandy lime-sink region by Dooly and Early, the rolling wire-grass by Appling, Bulloch, Emanuel, Irwin, Montgomery, Tattnall and Telfair, the flat pine lands by Clinch, Effingham, Ware and Wayne, and the coast strip by Chatham, Glynn and McIntosh.

The population of lower Georgia at that time was almost entirely rural, outside of the fall-line cities and seaports. The only railroad of consequence was the Central from Savannah to Macon, with a branch from Gordon to Milledgeville, and it did not touch any county-seats between its terminals until over sixty years after it was built.[1] The

1 There is a tradition in Bulloch County that the railroad was originally intended to take a pretty direct course from Savannah to Macon, but Peter Cone, a large land-holder and member of the Legislature from Bulloch, successfully opposed it on the ground that the trains would kill too many of his cattle; so that when the railroad reached Meldrim it turned aside and went up the east side of the Ogeechee River. But my friend Dr. U. B. Phillips, one of the greatest modern authorities on Georgia history, assures me that there is no documentary evidence of any such action by the Legislature.

stations at first were located approximately ten miles apart, and numbered instead of named, and some of the oldest inhabitants still refer to them by number (or did a few years ago). The Southwestern R. R., now a part of the Central, had been built about forty miles southwestward from Macon.

The only cities and towns in lower Georgia mentioned in the census of 1850 are as follows: At the inland edge of the sand-hills, Augusta, with about 10,000 inhabitants, and Macon, with 5,720. At the inland edge of the blue marl region, Columbus, with 5,942. In the red hills, Buena Vista, with 530, Lanier (county-seat of Macon Co., now extinct) 217, and Waynesboro 192. In the wire-grass, Jacksonville, the old county-seat of Telfair, had 119 inhabitants. In the coast strip, Savannah, the largest city in the state, had 15,312, and Darien 550.

The only apparent error in the Seventh Census as far as it concerns lower Georgia is that the improved land in Pulaski County seems excessive, but that county is not used in the statistics because it then included what is now Dodge County, which is mostly in a different region. Richmond, Bibb, Crawford, Muscogee, Marion, Stewart, Sumter, Laurens, Screven, Decatur, Thomas, Lowndes, Bryan, Liberty and Camden Counties also are not used in the statistics, because they were then too large and diversified (and some of them still are).

The coast strip was then the most densely populated, but if the city of Savannah were excluded the red hills would lead in that respect. The coast strip had over twice as many negroes as white people, while in the two poorest regions, the rolling wire-grass and flat pine lands, whites outnumbered the negroes about three to one. The percentage of illiteracy among the whites, then as now, was roughly inversely proportional to the percentage of negroes, for

TABLE 1.
AGRICULTURAL STATISTICS OF LOWER GEORGIA, 1850.

	Red Hills	Red Lime Lands	Sandy Lime-Sink	Rolling Wire-Grass	Flat Pine Lands	Coast Strip
Inhabitants per square mile	17.3	.....	7.0	3.1	2.7	24.0
Per cent White	47.0	49.0	60.4	76.0	72.9	31.0
Per cent Free Colored	0.3	0.1	0	0.3	0.2	2.3
Per cent Slaves	52.7	50.9	39.5	23.7	26.9	66.7
Per cent Illiterate among Adult Whites	21.7	30.0	30.8	31.3	32.7	7.3
Per cent of Land Improved	25.7	.....	7.0	2.6	1.8	7.9
Inhabitants per Farm	18.0	18.0	15.0	9.7	11.3	102.0
Improved Acres per Inhabitant	9.5	7.7	6.7	5.3	4.2	2.1
Average Number of Acres per Farm	531	530	531	1033	719	1030
Average Number Improved Acres per Farm	172	138	101	52	47	211
Value of Land and Buildings per Farm	2339	3150	1125	700	716	10230
Value of Implements and Machinery per Farm	177	150	85	38	42	924
Value of Live-Stock per Farm	613	740	590	518	500	750
Number of Slaves per Farm	9.5	9.0	6.0	2.3	3.0	67.2
Number of Horses per Farm	3.2	2.9	2.5	2.5	2.2	5.6
Number of Mules per Farm	1.7	2.2	0.9	0.2	0.2	1.6
Number of Work Oxen per Farm	1.5	1.4	1.4	0.6	0.2	2.9
Number of Milch Cows per Farm	5.5	11.8	11.4	19.6	20.4	18.2
Number of Other Cattle per Farm	13.2	37.5	39.8	32.5	33.2	37.4
Number of Sheep per Farm	12.6	10.5	13.4	15.5	9.8	15.2
Number of Swine per Farm	52.6	75.0	55.5	56.0	56.7	30.6
Value of Animals Slaughtered, per Farm	165	175	120	95	86	82
Bales of Cotton Produced, per Farm	17.5	22.0	9.9	1.0	0.7	0.6
Bushels of Corn Produced, per Farm	707	705	490	234	222	420

where slaves were most numerous they did all the menial tasks, and the whites had to be reasonably intelligent to direct them.

The red hills apparently had by far the largest proportion of improved land (and nearly half the farms in South Georgia), indicating the best soil, but if we had accurate figures for the blue marl region and red lime lands one of those might have been a close second or even ahead. The largest farms were in the wire-grass country, but land there was then worth only a few cents an acre, and only about one-twentieth of the farm land was improved. The coast strip led in improved acres per farm (or plantation), but the red hills and red lime lands were not far behind.

The coast strip also had the most valuable farms, and the most machinery, slaves, horses and oxen per farm. It is interesting to note that every region then had more horses than mules, as was the case also in upper Georgia. The red lime lands led in mules and hogs per farm, and the wire-grass (then and long afterward) in sheep. In the last-named region the raising of cattle and sheep on free range in the open pine woods was evidently a much bigger business than tilling the soil, and the same is true of the flat pine lands, except that sheep were not very important there, probably because they do not flourish in swampy regions.

By 1860 the counties of Glascock and Taylor had been created, and those are used to represent the sand-hill belt. Chattahoochee and Quitman Counties were laid out about the same time and much of the red hill part of Stewart cut off, so that those three counties become available for the blue marl region, though they do not represent it very accurately, as already explained. Marion was reduced in size, but still too diversified for our purposes. Clay, Schley and Webster were added to the list of red hill counties, and some of the others reduced in size. Most of the red lime lands portion of Baker County had been put into Calhoun and Dougherty, and those two with Lee and Terrell now

represent the red lime lands pretty well, although Lee differs in some respects, as already explained. The sandy lime-sink region is represented by Baker, Dooly, Early, Miller and Mitchell. Decatur, Johnson, Laurens, Pulaski, Screven, Wilcox and Worth are not used, on account of being partly in the lime-sink region and partly in the rolling wire-grass. To the list of counties for the last-named are now added Berrien, Coffee and Colquitt. Brooks, Lowndes and Thomas represent the hammock belt, but not very accurately, as already explained. To the flat pine lands counties Charlton, Echols and Pierce are added. Part of Appling was transferred to Wayne about this time, necessitating a revision of the areas. Bryan, Camden and Liberty, having most of their area in the pine lands and most of their farms in the coast strip, are not used. The same three counties as before are used for the coast strip, but part of McIntosh seems to have been transferred to Liberty, making a change in area.

The railroad mileage increased considerably between 1850 and 1860. The Augusta branch of the Central R. R. was built, the Southwestern was completed to Oglethorpe in 1851, and later to Columbus and Albany, about fifty miles of the Macon & Brunswick (afterwards the E. T. V. & G., now Southern Ry.) was built, the Brunswick & Albany (now Atlantic Coast Line) was started, and the Atlantic & Gulf (afterwards S. F. & W., now Atlantic Coast Line) had just reached Thomasville.

The cities and towns were growing slowly, and new ones were springing up along the railroads. Along the fall line Augusta had 12,493 inhabitants, Macon 8,247, and Columbus 9,621. In the red hills were Lumpkin with 765 and Oglethorpe 454. In the red lime lands Albany had 1,618 and Morgan (county-seat of Calhoun Co. from its inception until a few months ago) 187. In the lime-sink region the population of Newton was returned as 3,225 and Bainbridge 1,869, but these figures seem excessive (unless steam-

boat traffic on the Flint River was much larger than we now realize) and may represent whole districts. In the hammock belt Valdosta had 166 inhabitants and Troupville, the old county-seat of the same county, 158. Blackshear, in the flat pine lands, had 319. In the coast strip were Savannah, with 22,292 inhabitants, Brunswick, with 825, St. Mary's with 650, and Darien with 570.

Two apparent errors in the census need to be noted. The value of implements and machinery in Early County was returned as $154,170, which seems about three times too much, and should perhaps have been $54,170. In Thomas the number of "other cattle," 166, would be more reasonable if it was multiplied by 100. For these reasons two spaces in the table are left blank, for if the figures were taken literally the results would be preposterous.

The farms increased in size and value between 1850 and 1860, as in upper Georgia, but not as much as the figures appear to indicate, as explained in the previous article. The relative rank of the several regions remained about the same as before. Of the three regions not represented in the 1850 table, the sand hills ranked a little below the state average in density of population, the blue marl region above, and the hammock belt probably also above, if we had the true facts. The two latter had negroes in the majority, like most other fertile regions in the cotton belt. The number of white persons per farm ranged from about 9 to 11, except in the coast strip, where the large city population upsets the calculations.

In value of property per farm most of these regions were far above the United States average, and even above the average for the lower Piedmont, the most prosperous region in upper Georgia. In most of the evidences of wealth either the red lime lands or the coast strip led, in spite of the fact that in the former region the population was practically all rural. That region then produced about four times as much cotton per farm and three times as much per square

TABLE 2.
AGRICULTURAL STATISTICS OF LOWER GEORGIA, 1860.

	Sand Hills	Blue Marl	Red Hills	Red Lime Lands	Sandy Lime-Sink	Rolling Wire-Grass	Hammock Belt	Flat Pine Lands	Coast Strip
Inhabitants per square mile	16	28	20	21	10	4.2	13	3.7	31
Per cent White	63	45	42	37	48	75	46	73	44
Per cent Free Colored	0.3	0.1	0.3	0.1	0	0.2	0.1	0.3	1.9
Per cent Slaves	37	55	58	63	52	25	54	27	54
Per cent of Land Improved	22	46	36	33	15	4	15	2.4	8.3
Inhabitants per farm	15	21	22	26	20	11	24	13	95
Improved acres per Inhabitant	8	11	11	11	9	6	7	4	1.7
Average number of Acres per Farm	416	433	612	662	685	985	816	757	885
Average no. Improved Acres per Farm	125	219	250	266	180	65	167	56	161
% Farms with over 100 Acres Improved	36	53	61	57	46	21	50	16	39
Value of Land and Buildings per Farm	2470	3850	4310	7200	4615	1095	4470	1565	11000
Value of Implements and Machinery per Farm	95	170	150	220	.....	62	220	65	415
Value of Live-Stock per Farm	550	960	965	1240	1110	676	1035	631	990
Number of Slaves per Slave-Holder	9.5	12.2	13.6	13.8	14.2	7.2	13.0	7.9	14.4
% Holders with 10 or more	28	37	39	36	41	22	41	27	31
Number of Slaves per Farm	5.0	12.0	12.6	16.5	10.5	2.7	13.0	3.6	50.7
Number of Horses per Farm	3.9	2.0	2.8	2.1	2.5	2.2	2.3	1.8	3.2
Number of Mules per Farm	1.8	3.5	3.0	4.7	2.6	0.5	2.7	0.6	1.8
Number of Work Oxen per Farm	1.4	1.3	1.4	1.3	1.3	0.7	1.0	0.3	1.6
Number of Milch Cows per Farm	4.2	5.2	5.0	7.2	8.7	12.8	11.6	11.9	13.8
Number of Other Cattle per Farm	9.3	9.1	11.7	16.0	24.0	28.9	.....	32.3	33.6
Number of Sheep per Farm	3.4	3.3	6.6	5.5	14.2	26.8	14.3	7.4	8.7
Number of Swine per Farm	36	44	54	67	52	49	68	51	35
Value of Animals Slaughtered per Farm	210	235	282	310	255	153	305	152	95
Value of Animals Slaughtered per sq. mile	240	315	261	245	135	60	175	42	32
Bales of Cotton (1859) per Farm	12.0	35.5	28.8	45.5	24.5	2.0	14.0	1.2	5.5
Bales of Cotton (1859) per sq. mile	13.7	47.5	26.6	36.0	13.4	0.8	8.0	0.3	2.0
Bushels of Corn (1859) per Farm	450	730	826	1040	720	276	768	281	414
Bushels of Corn (1859) per sq. mile	515	990	765	830	390	108	435	77	140

mile as the state average, and more corn per farm than the great corn-belt states of Illinois and Iowa.

The red lands and coast strip had more slave-holders than farms, which in the former case at least indicates that practically every farmer owned slaves. This may have been true in the latter also, but we have no way of knowing just how many of the slave-holders lived in Savannah and had slaves only for domestic service. In the wire-grass and flat pine lands evidently most of the farmers got along without any slaves, and the same was probably true in the sand hills too.

Mules now outnumbered horses in some of the more fertile regions, doubtless on account of the diminishing free range, as explained in the article on upper Georgia. The wire-grass region led in sheep, as before, and the hammock belt in hogs. Hogs were more numerous than people except in the coast region (and they may have been there too, outside of the cities).

Between 1860 and 1870 the Civil War caused some profound changes, but, as was stated in the previous article, it seems fair to assume that very few negroes were operating farms in 1870, and to interpret the statistics accordingly, except in the coast strip, which will be referred to more particularly farther on.

The counties were the same in 1870 as in 1860, but the railroads had been extended a little and several new towns had sprung up. The Atlantic & Gulf R. R. (now Atlantic Coast Line) was completed to Bainbridge soon after the war, and branches built from Thomasville to Albany and from near Dupont southward into Florida. The Southwestern was pushing westward from Albany, and the Brunswick & Albany was nearing completion.

The principal cities and towns were as follows:-

Along the fall line, Augusta with 15,389 inhabitants, Macon, with 10,810, and Columbus, with 7,401.

In the blue marl region, Georgetown 263, Cusseta 216.

In the red hills, Americus, 3,259, Cuthbert 2,210, Fort Valley 1,333, Perry 836, Lumpkin 778, Fort Gaines 758, Buena Vista 525, and several smaller.

In the red lime lands, Albany 2,101, Morgan 126.

In the lime-sink region, Bainbridge 1,351, Hawkinsville 813, and a few under 300.

In the rolling wire-grass country, Swainsboro had 108 inhabitants, and no other place over 100.

In the flat pine lands, Blackshear, 490.

In the coast strip, Savannah, 28,235, Brunswick 2,348, St. Mary's 702, Darien 547.

Every region in South Georgia showed a moderate increase in population during the decade, but this was more among the negroes than among the whites, in spite of the fact that the former are thought to have been counted less completely than usual in 1870. The improved land increased a little except in the red hills, flat pine lands and coast strip, but the number of farms increased more, making them smaller except in the blue marl region and red lime lands, which remained about the same in that respect. The great decrease in average farm size in the coast strip (to about one-fourth in both total and improved acreage) strongly suggests that many negroes must have become farm proprietors there soon after emancipation; and this is corroborated by the fact that ever since white and negro farmers have been separated by the census there have been more negro owners than tenants in that region.

The value of property per farm in most regions dropped to less than half of what it was before the war, in spite of being measured in the inflated currency of 1870. Mules now outnumbered horses in every region except the two poorest. Cattle, sheep and hogs, especially the later, diminished considerably during the war, as would be expected.

Wages paid to farm laborers is an item which appears for the first time in the returns for 1870, and it is natural that the expenditure per farm should be lowest in the poorest

TABLE 3.
AGRICULTURAL STATISTICS OF LOWER GEORGIA, 1870.

	Sand Hills	Blue Marl	Red Hills	Red Lime Lands	Sandy Lime-Sink	Rolling Wire-Grass	Hammock Belt	Flat Pine Lands	Coast Strip
Inhabitants per square mile	19	31	23	28	13	4.8	19	4.0	40
Per cent White	62	39	37	27	47	76	46	75	39
Per cent Colored	38	61	63	73	53	24	54	25	61
Per cent of Land Improved	23	49	31	34	16	4.1	21	2.2	6.0
Number of Inhabitants per Farm	13	22	18	37	20	9.7	17	13	43
Improved Acres per Inhabitant	7.7	10.2	8.4	7.9	7.7	5.4	7.1	3.6	1.0
Average Number of Acres per Farm	325	435	374	635	465	729	460	628	240
Average Number Improved Acres per Farm	103	220	153	283	160	53	120	46	41
Value of Land and Buildings per Farm	1060	2575	1670	3940	1675	408	1490	407	2390
Value of Implements and Machinery per Farm	70	110	87	160	75	42	75	40	115
Value of Live-Stock, per Farm	420	660	517	1050	600	567	526	535	270
Number of Horses per Farm	0.9	1.1	1.2	1.3	1.4	1.5	1.0	1.2	0.5
Number of Mules per Farm	1.1	2.9	1.9	4.9	2.0	0.5	1.5	0.5	0.7
Number of Work Oxen per Farm	0.9	0.8	0.7	1.1	1.0	0.8	0.7	0.6	0.3
Number of Milch Cows per Farm	2.6	3.0	2.7	3.9	5.4	9.0	4.8	10.5	3.0
Number of Other Cattle per Farm	5.4	5.4	5.2	7.6	11.2	21.6	10.3	21.3	4.0
Number of Sheep per Farm	2.8	1.6	2.6	3.3	10.0	24.2	9.6	6.2	0.9
Number of Swine per Farm	14	14	15	17	21	29	21	31	6.0
Value of Animals Slaughtered per Farm	153	66	96	150	80	118	145	112	25
Value of all Products, per Farm	1430	2325	1716	3745	1635	614	1260	545	1520
Wages Paid, Including Board, per Farm	265	840	470	1325	395	45	235	68	140
Bales of Cotton Produced, per Farm	6.5	19.5	11.0	35.0	12.0	1.3	7.0	1.1	0.4
Bushels of Corn Produced per Farm	235	406	312	655	410	155	320	162	75

regions, where the farmers were mostly poor whites who never owned slaves and were accustomed to doing their own work. The great difference in this respect between the red lime lands and the coast strip, both of which had a large negro majority, suggests again that nearly all the negro men in the former were hired laborers, while in the latter many must have had their own little farms. The red lime lands were leading in corn and cotton per farm, as before.

Before 1880 the Macon & Augusta R. R. (now a part of the Georgia), which had been started before the war, was completed, making the sand hills more accessible. The Macon & Brunswick and Brunswick & Western were completed, and two short lines connecting Louisville and Sandersville with the nearest points on the Central R. R. were built.

Most of the cities and towns were growing as usual, though there were some exceptions. The three fall line cities maintained about the same relative rank. In the sand hills were Geneva, with 254 inhabitants, and Gibson, with 123. In the blue marl region, Georgetown 245, Cusseta 166, both a little less than in 1870. In the red hills Americus had 3,635, Cuthbert 2,129, Sandersville 1,279, Fort Valley 1,277, Waynesboro 1,008, Perry 929, Fort Gaines 867, Lumpkin 747, Marshallville 543, Buena Vista 529. In the red lime lands, Albany 3,216, Dawson 1,576, Leesburg 359, Smithville 329. In the lime-sink region, Hawkinsville 1,542, Bainbridge 1,436, Cochran 836, Camilla 672, Dublin 574. In the rolling wire-grass country were Sylvania 314, Wrightsville 272, Swainsboro 186, and a few smaller ones. In the hammock belt, Thomasville 2,555, Valdosta 1,515, Quitman 1,400, Boston 366. In the flat pine lands, Blackshear 778, Jesup 562, Homerville 201. In the coast strip, Savannah 30,709, Brunswick 2,891.

The only county change in South Georgia between 1870 and 1880 was the cutting off of Dodge from Pulaski, which released Pulaski for use in the statistics of the lime-sink region.

TABLE 4.
AGRICULTURAL STATISTICS OF LOWER GEORGIA, 1879-80.

	Sand Hills	Blue Marl	Red Hills	Red Lime Lands	Sandy Lime-Sink	Rolling Wire-Grass	Hammock Belt	Flat Pine Lands	Coast Strip
Inhabitants per square mile	24	30	29	32	19	7.0	26	*6.1*	45
Per cent White	60	34	36	*25*	44	74	44	70	36
Per cent Colored	40	66	64	75	56	*26*	56	30	64
Per cent of Land Improved	24	36	35	38	23	5.0	22	*3.2*	4.9
Number of Inhabitants per Farm	11	16	11	14	10	*9.4*	12	11	32
Improved Acres per Inhabitant	6.3	7.6	7.8	7.5	7.8	4.6	5.3	3.2	*0.6*
% of Farms Operated by Owners	62	56	42	*35*	49	89	61	87	51
% by Cash Tenants (Renters)	23	17	23	24	32	3.6	15	*4.3*	40
% by Share Tenants (Croppers)	15	27	35	41	19	*7.5*	24	9.0	9.4
Average Number of Acres per Farm	212	290	189	206	209	540	245	489	*115*
Average Number of Improved Acres per Farm	73	118	87	99	80	42	65	37	*20*
Value of Land and Buildings per Farm	750	1060	875	753	749	589	855	*528*	1015
Value of Implements and Machinery per Farm	36	57	43	52	34	*32*	47	35	51
Value of Live-Stock, per Farm	182	268	202	208	228	353	224	334	*138*
Number of Horses per Farm	0.5	0.7	0.7	0.4	0.7	1.1	0.8	1.0	0.5
Number of Mules per Farm	1.2	1.9	1.2	1.6	1.0	0.5	0.9	0.4	0.4
Number of Work Oxen per Farm	0.7	0.6	0.4	0.4	0.6	0.7	0.6	0.8	0.4
Number of Milch Cows per Farm	3.1	2.4	*1.7*	2.2	3.3	7.2	3.6	8.2	2.2
Number of Other Cattle per Farm	4.6	4.1	3.1	3.7	5.6	15.5	7.0	17.1	3.0
Number of Sheep per Farm	1.7	1.0	1.2	1.0	5.1	26.6	4.2	8.5	*0.9*
Number of Swine per Farm	14	13	13	10	14	25	14	24	*6*
Number of Chickens per Farm	14	24	15	15	17	22	18	16	*11*
Number of Other Poultry	5.6	10.1	7.2	1.9	4.5	13.5	8.8	9.9	3.0
Cost of Fertilizers (1879) per Farm	44	23	45	20	30	31	26	9.00	*2.65*
Value of Products (1879) per Farm	555	910	643	650	575	348	465	*276*	589
Cost of Fertilizer per Improved Acre	.61	.19	.25	.20	.39	.70	.40	.24	*.12*
Value of Products per Improved Acre	7.65	7.72	7.43	*6.53*	7.15	8.00	7.23	7.45	28.20
% of Improved Land in Cotton	33	39	38	42	37	15	33	9.2	*1.8*
% of Improved Land in Corn	35	28	32	28	33	37	34	34	*17*
% of Improved Land in Oats	4.1	5.1	4.5	8.0	8.5	17.6	18.8	14.4	*3.0*
% of Improved Land in Sweet Potatoes	0.7	0.9	*0.5*	0.7	0.9	1.8	1.5	2.4	4.1
Bales of Cotton per Acre	0.29	0.29	0.30	0.24	*0.23*	0.35	0.27	0.29	0.27
Bushels of Corn per Acre	6.6	5.8	6.7	6.1	*5.1*	8.4	7.0	8.2	12.0
Bushels of Oats per Acre	11.0	10.6	9.7	7.8	8.3	8.7	10.1	7.9	13.2
Bushels of Sweet Potatoes per Acre	80	*56*	87	58	73	116	64	101	75

On comparing the 1880 figures with those for 1870 we find a moderate increase of population in every region except the blue marl. In the two poorest regions the increase was about 50%, probably on acount of the use of commercial fertilizers, which had just become important enough for the census to take cognizance of, and made it possible to cultivate some poor soils with profit. The negroes seem to have increased a little faster than the whites in every region, but that may be due partly to the supposed incomplete enumeration in 1870.

The percentage of improved land increased, except in the blue marl region and coast strip. Tenure of farms is now given for the first time, and the percentage of owners is largest in the two or three poorest regions,partly on account of the predominance of white farmers and partly on acount of the cheapness of the land, which made it easy for anybody to own a farm. The great decrease in the average size and value of farms, especially in the regions with large negro population, indicates plainly that the freedmen were rapidly setting up in business for themselves. For this reason the remaining per farm statistics do not mean much, as noted in the previous article.

Fertilizers are now returned for the first time, and the most extensive use of them was in the rolling wire-grass country, which had the largest proportion of intelligent white farmers, and the least in the coast strip; and this is reflected in the yield of cotton per acre, which now begins to have little connection with the natural fertility of the soil. The yield of all crops per acre does not seem to be affected much by the racial composition of the farm population, and indicates intensity of farming more than anything else, as will be illustrated better when we come to later censuses, that give more complete data on farm expenditures and receipts.